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feet in Garrett county, Md. (J. D. Smith); at 2,000 feet on the Pocono Mt., Pa. (Porter); at 2,000 feet at Onteora, N. Y. (Miss Vail); from 90–1,000 feet in Northern Vermont (Pringle, Brainerd); at 1,000 feet in Coos county, N. H. (Deane). [*Louisianian; Carolinian; Alleghanian.*]

Notes upon various Species of Iridaceæ and other Orders.

By Thomas Morong.

IRIDACEÆ.

Two species of *Iris* must be added to the list of those within the range of A. Gray's Manual, Ed. 6, and one other if Canada be included.

Iris Germanica, L., the great violet-colored flag of Middle Europe, was found by Mr. A. A. Heller during the last year apparently well established near Mt. Crawford, Western Virginia. Probably a garden escape.

Iris Missouriensis, Nutt. (*I. Tolmieana*, Herb.) occurs in Missouri and Nebraska, and more commonly towards the southwest.

Iris Hookeri, Penny, Steud. Nom. Bot. Pt. 1, 822 (1840). This has been established as a good species by Mr. Watson (Coult. Bot. Gaz. xii. 100). It occurs in Newfoundland and along the lower St. Lawrence (Pringle). *I. Canadensis*, which one might at first thought imagine it to be, has not yet been identified. This, as nearly as we can judge, is merely a form of *I. versicolor*, L., but may prove distinct when we come to understand the Canadian species more thoroughly.

Iris tridentata, Pursh, not hitherto detected in our territory, is most commonly called *I. tripetala*, Walter, but Walter's name is antedated by *I. tripetala*, L. f. Supp. 97 (1781), a different species, now transferred to *Moræa*, but remaining a synonym nevertheless.

SISYRINCHIUM.

The species of the Atlantic States should be termed *S. Bermudianum*, L., in spite of the fact that it is not known to occur in Bermuda, as this was undoubtedly the original name given to it by Linnæus. In Sp. Pl. 954, he mentions two forms: "α *S. Bermudiana*," which he says grows in Virginia, and "β *S. Bermudiensis*," which is attributed to the Bermudas. The first is founded upon Plukenet's t. 61, f. 1, and Dillenius' t. 41, f. 49, both of which are evidently our plant, and the habitat cited is Virginia. It differs very essentially from *S. Bermudiense*, the Bermudan plant. Linnæus apparently had not seen this latter plant, as no specimen of it is preserved in his Herbarium (*teste* Hemsley, Brit. Journ. Bot. xxii. 109).

As to the question whether there are two or more species in the Atlantic States, I am very well satisfied after a careful study of all the forms that so far we cannot be sure of more than one. The distinctions made between *S. angustifolium*, Mill. and *S. anceps*, Cav. do not seem to hold. Both have from one to several peduncles, and both have seeds nearly smooth, faintly and deeply pitted. Abundant specimens of both, contained in the Herbarium of Columbia College, as well as specimens collected fresh in the vicinity of the city of New York, show this to be the fact.

S. mucronatum, Mx, is merely a narrow-winged form of *S. Bermudianum*. It seems to me that Dr. Asa Gray, in the first edition of his Manual, named the plant correctly, regarding *anceps* and *mucronatum* merely as forms of *S. Bermudianum*.

The synonymy will stand as follows:

S. Bermudianum, L. Sp. Pl. 954 (1753).
S. angustifolium, Mill. Dict. (1768).
S. anceps, Cav. Diss. 6, 345, t. 190, f. 2 (1788).
S. gramineum, Curtis, Bot. Mag. t. 464 (1799).
S. mucronatum, Mx. Fl. ii. 33 (1803).

ORCHIDACEÆ.

In an article contained in the BULLETIN OF THE TORREY BOTANICAL CLUB, xx. 31, the writer maintained the essential identity of *Habenaria ciliaris* (L.) R. Br. and *Habenaria blephariglottis* (Willd.) Torr.

On the 23d of last July I had a good opportunity to compare the two, then in flower, growing side by side on Staten Island, New York. A critical study of the plants in fresh blossom has led me to modify my opinion to some extent. The thing which had puzzled me the most in my first examination was an intermediate form bearing yellow flowers, with both naked and fringed or cut-toothed petals, *H. blephariglottis* being described in the books as having only white petals with naked margins. Of this intermediate form I found several examples mixed among the two species. This I now believe is a hybrid, and fully accounts for the apparent running together of the two. The real *ciliaris* and *blephariglottis* are perhaps sufficiently distinct to be regarded as separate species. The latter has somewhat smaller, pure white petals, a narrower, oblong tip, and flowers three or four days earlier than *ciliaris* In *ciliaris* the lip broadens in the middle and the corolla is of a deep yellow or orange tint. So far as size and habit, the margins of the petals and the fringe of the lip are concerned, scarcely any distinction between the two seems to exist, and they must be regarded as very closely related. The fact that they hybridize, if nothing else, would show this to be the case.

In that article I also noticed a monstrous form of *H. ciliaris*, obtained by Mr. Henry Ogden in the vicinity of New York. I have now to mention still another irregularity of this species. Mrs. J. C. Wright, of Fairfield, Conn., sends us a proliferous form which has four additional racemes of flowers growing from the summit of the regular raceme. The plant is normal in other respects.

COMMELINACEÆ.

Commelina communis, L., not noted in Gray's Manual. Occurs extensively in and around the city of New York, and along the Susquehanna River in Pennsylvania, from its mouth to the hills above Harrisburg. It may readily be distinguished from *C. Virginica*, L., by its spathe, which is split to the base, and by its glabrous, or nearly glabrous, stem and leaves, and from *C. nudiflora*, L., by its open spathe, generally much broader leaves and more robust habit, as well as by the much larger seeds of the ventral cell, which are rugose and deeply pitted instead of being merely reticulated as in *C. nudiflora*. This species is usually regarded as introduced, but as the writer found it this summer on the Susquehanna, it has every appearance of being native. In this connection, it is worthy of note that Linnæus gives its habitat as "America."

TRADESCANTIA.

Four well marked species of this genus are found within our bounds:

Tradescantia rosea, Vent., occurring from Maryland to Florida and west to Missouri and Texas.

Tradescantia Virginiana, L., not *T. Virginica*, as usually written.

Tradescantia pilosa, Lehm., Nov. Act. Ac. Caes. Leop. xiv. Pt. 2, 822, t. 48 (1828).

This is a good species, entirely distinct from *T. Virginiana*. It has stout stems which are more or less pubescent or pilose, often flexuous (*T. flexuosa*, Raf.), and is especially distinguished by its numerous umbels (1–7), commonly dense and many-flowered, terminal and axillary or on axillary branches. Pedicels and sepals usually glandular hairy. Mr. Eggert, of St. Louis, Mo., in sending specimens from his neighborhood, writes that it has larger leaves and more numerous flowers and blossoms much later than *T. Virginiana* (July).

Tradescantia brevicaulis Raf. Atl. Jour. 150 (1832). Probably the plant named "*T. Virginica*, var. *villosa*, Watson," in Gray's Manual, Ed. 6. This should not be confounded with *T Virginiana*, as it is clearly distinct. A dwarf plant, one to six inches high, or oftentimes acaulescent. The stem, leaves, pedicels and calyx are pilose with long spreading hairs which are seldom if ever glandular. The leaves are narrow and sometimes 12 inches in length; the bracts wider and often larger. Umbels 4 to 12-flowered, with rays 1 to 2 inches long. Corolla rather small, blue or rose-purple.

Mr. Eggert collected this form in Missouri, and writes that it grows on rocky hillsides, and blossoms very early, scarcely any flowers to be seen by the end of May. Rafinesque reports it from Illinois and Kentucky.

SCITAMINEÆ.

Thalia dealbata, Roscoe, recently received from Mr. Eggert, grows in the swamps of Missouri.

AMARYLLIDACEÆ.

Hymenocallis occidentalis (Leconte) Kunth. Specimens of this, obtained the last summer in Missouri by Mr. Eggert, raise the question anew whether we have more than one species in the Atlantic States. Mr. Watson, in Proc. Am. Ac. xiv. 301, describes two species, *H. Palmeri,* S. Wats. and *H. humilis,* S. Wats. as occurring in Florida. Leconte notes four other species growing in the States just north of Florida, of which he writes full and elaborate descriptions, accompanied by excellent drawings of three of them. These species he names *Pancratium Mexicanum, P. rotatum, P. coronarium* and *P. occidentale.* The last species he assigns to Georgia, Tennessee and Kentucky, and this without much doubt is the same as the Illinois and Missouri plant. As Leconte was a very accurate observer and better acquainted with the habits and forms of these plants than any writer since his time, I have no doubt that he is correct in his conclusions, whether his names are to be adopted or not. Whether any of his species is the old *P. Carolinianum* of Linnæus or not has long been a mooted question. The species of Linnæus is founded upon Catesby's figure (Nat. Hist. Car. i. App. 5), described by Catesby as "Lilio-Narcissus Polianthos," and seen by him in a "bog near Palluchucula, an Indian town on the Savannah river, Georgia." Nothing just like this figure has been found since.

The border of the staminal cup is represented with 2 and 3 large triangular teeth between each pair of stamens, and the flower cluster with 2 spathe-like bracts at the base. Some botanists are disposed to regard this as a rude drawing of *H. rotata* or *H. occidentalis,* while others (*e. g.* Baker in Amaryll. 113) consider it *P. maritimum,* a common European species. Neither Walter nor Elliott profess to have seen it, nor is it contained in any American or European Herbarium. For the present, therefore, we are compelled to regard it as a myth.

H. occidentalis seems quite clearly distinct from *H. lacera,* Salisb. (*H. rotata,* Herb.) which Mr. Watson in the work cited above regards as probably the original of the Linnæan plant.

HÆMODORACEÆ.

Of this order as now arranged by Engler and Prantl, we have only a single genus in this country, namely, GYROTHECA, Salisb. Trans. Lin. Soc. i. 327 (1815).

Heritiera, Gmel. (1791) which Kuntze substitutes for Elliott's *Lachnanthes* had been used two years previously by Dryander (Ait. Hort. Kew. iii. 456) for a genus of the Sterculiaceæ. The older names for Dryander's genus cited by Kuntze, such as *Amygdalus*, Burm. and *Atunus*, Rumpf. are pre-Linnæan. The next in priority appears to be *Gyrotheca.*

A single species only is known:

Gyrotheca capitata (Walt.). It is a little singular that Walter's specific name has been changed into "tinctoria" by all the writers who have quoted him, from Pursh to Kuntze. The plant is placed by Walter among his "Anonymo" genera, the term he uses when he is doubtful about the genus, but his description is so full that no one can doubt what is meant.

The synonymy will stand as follows:

Gyrotheca capitata (Walt.).
Anonymo capitata, Walt. Fl. Car. 68 (1788).
Dilatris Caroliniana, Lam. Ill. i. 127 (1791).
Heritiera Gmelini, Michx. Fl. i. 21 (1803).
Dilatris tinctoria, Pursh, Fl. 30 (1814).
Gyrotheca tinctoria Salisb. Trans. Hort. Soc. i. 327 (1812).
Lachnanthes tinctoria Ell. Sk. i. 47 (1817).
Heritiera tinctoria (Gmel.) Kuntze, Rev. Gen. 699 (1891).

NAIADACEÆ.

Potamogeton Spirillus, Tuckerm. In Britten's Journal of Botany for October, 1893, Mr. A. Bennett, commenting upon my adoption of Tuckerman's name for this species, advances the opinion that it should be called *P. dimorphum*, Raf., on the ground that Rafinesque in his review of Barton's Flora of 1815 in the Monthly Magazine and Critical Review of 1817 proposes this name in the place of *P. diversifolius* used by Barton for what he considers a new species, since that name had already been applied by Rafinesque himself to Michaux's *hybridus*. I should agree to this if we could be sure that Barton meant by his description in 1815, supplemented by his drawing and description in 1823, the plant which we now know as *Spirillus*. I must differ from Mr. Bennett, however, in thinking that *P. Spirillus* was meant. The figure of Barton represents a plant, as Barton himself puts it, with "submersed leaves very delicately filiform," some of those in the plate being over two inches in length. These are exactly the leaves of *P. diversifolius*, Raf. (*P. hybridus*, Michx.), and unlike those of *Spirillus* which are much shorter and broader. The only spikes of fruit shown are emersed ones which are figured as sessile. Now neither *diversifolius* nor *Spirillus* ever has emersed sessile spikes, but they are on peduncles from two to nine lines in length, and usually several times longer than the submersed ones. No Potamogeton answering to this figure in all respects has, so far as I know, been detected since Barton's day either in New Jersey, his locality, or anywhere else in the United States. New Jersey has been pretty thoroughly searched from one end to the other, and we should have been very likely to have seen this erratic form were it there. I am compelled to believe that in spite of his assertion to the contrary, Barton really had some form of Michaux's *hybridus* in hand. In the course of his article Mr. Bennett makes a fling which is unworthy of him, and which I have most certainly done nothing to provoke. He says (p. 295): "but the 'law' that is desired to be forced on us, 'that any species or variety that has been so named under any other species or variety cannot be used in the same genus,' will be of somewhat difficult application. Students certainly will never know, and even monographers will nôt be safe, as proved by Dr. Morong's own work, where he must (by his own law) change the names of at least three of his species, having failed to ascertain that they were in use before." Mr. Bennett seems to hold me responsible for this "law," whereas it is a rule of nomenclature adopted by our National Association of botanists at their meeting at Madison last August, a meeting at which I was not present, and did not influence in the least. I certainly do approve of it as a good rule, under what is termed the law of priority, a law which Mr. Bennett himself must acknowledge as sound, or his anxious search after the earliest names is useless. I think it would be difficult for Mr. Bennett to show that American botanists have ever manifested a desire to force this or any of their rules in nomenclature upon anybody either in this country or abroad. Certainly we shall lose no sleep if our British cousins choose to follow a different set of rules.